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DEPARTMENT OF COMMERCE

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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09/185,408 11/03/98 SZKUDLINSKI

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020995 HM22/0320
KNOBBE MARTENS OLSON & BEAR LLP
620 NEWPORT CENTER DRIVE
SIXTEENTH FLOOR
NEWPORT BEACH CA 92660

ART UNIT SPECIFIER NUMBER

DATE MAILED: 1647

03/20/01

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☒ Responsive to communication(s) filed on 2/5/01
- ☒ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 81-140 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 81-140 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☐ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 10
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

- SEE OFFICE ACTION ON THE FOLLOWING PAGES -

Part III: Detailed Office Action

All previously pending claims have been canceled. Newly introduced claims 81-140 are pending and under consideration.

5 The rejection of claims under 35 U.S.C. §§102 and 103 over Campbell et al. are withdrawn in view of applicants amendments, and in view of the fact that the claimed increase in activity of TSH would not have been predictable based upon Campbell's disclosure.

Formal Matters:

10 Applicants are requested to confirm that Figure 2H is as intended. The brief description of the figures states that such shows receptor binding of the various forms of TSH to CHO cells. The figure as submitted, however, would seem to indicate that wild type TSH binds best, followed by E63R, I58RE63R and I58RE63RL69R, respectively. Based upon the text of the specification, one would expect the opposite.

15

Objections and Rejections under 35 U.S.C. §112:

The following is a quotation of the second paragraph of 35 U.S.C. 112:

20 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 81-140 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

25 All claims which recite "a modified wild-type" are indefinite. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "modified wild-

type" in the claims is used to mean "modified," while the accepted meaning of "wild-type" is accepted in the art as meaning a strain, organism or gene "of the type predominating in the wild population" (see R. Rieger et al., "Glossary of Genetics and Cytogenetics", Springer-Verlag, New York, 1976. As wild-type means the form predominating in the wild, there can be no such thing as a 'modified wild-type', as once the thing is modified, it is no longer wild-type. Although applicants have pointed to pages 7 and 22 of the specification for support for the term, the actual term "modified wild-type" does not occur, and is repugnant to the art.

Given that one cannot determine what is meant by "modified wild-type", the metes and bounds of the claims cannot be determined; it would appear that there is no limit on the numbers and types of changes permitted in the 'modified wild-type' hormone (as the dependent, further limiting claims recite *additional* substitutions), so that the metes and bounds of the claims cannot clearly be determined. While the Examiner did, in the interview, suggest providing the basis for comparison ("the corresponding wild-type TSH"), she did not suggest using the term "modified wild-type".

The claims are further indefinite as, to use claim 81 as an example, it is not clear whether the description beginning with 'comprising' refers to the wild-type, or the claimed modified hormone. Amendment to read (to use claim 81 in part as an example) "compared to wild-type human TSH, the (or said, if there is basis for such) modified TSH comprising..." would be remedial of this point.

Claims that recite that "*the* basic amino acid residues of the α (or β) subunit are at positions..." are indefinite, as they would seem to imply that the recited residues are the only basic residues in the protein. Amendment to recite '*said* basic amino acid residues' would be remedial.

In claim 101, it is not clear how a protein can be 'further modified' to have *fewer* than five other amino acid substitutions; such would seem to include no further substitutions, and it is not clear how something can be modified to stay the same. Claims 102-105 are similarly indefinite, claim 105 reaching the point of requiring further modification to be the *same* as wild-type. The use of "further modified" puts the meaning of 'homology' into question, as such may include, as commonly used in the art, conservative substitutions, and as the specification does not breath life and meaning into the term. Accordingly, given the current amendments to the claims, the Examiner suggests the use of

✓ complete *identity* with the corresponding wild-type human TSH. It is acknowledged that “homology” was suggested by the Examiner in the previous Office Action, however this suggestion was based upon the claim language as it previously occurred; the current claims raise new issues that make the term unsuitable. Claims 127-131 are similarly indefinite.

5 The claims remain indefinite because the term “human” glycoprotein hormone, as used in all of the claims, is indefinite. It is noted that the specification defines the term at page 7. However, the definition proffered therein is both relative and subjective, as it defines “human” only in terms of what other sequence the claimed sequence is being compared to. As there is no basis for comparison in the claims, e.g. the claims do not state that the protein is “human” as determined relative to bovine,
10 for example, the claims are indefinite. ‘ It is suggested that applicants draft claims using language such as “A human thyroid stimulating hormone which differs from the wild-type TSH...” and then stating what differences are allowed relative to wild-type, using appropriately limiting language.

15 The following is a quotation of the first paragraph of 35 U.S.C. 112:

 The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out
20 his invention.

 Claims 81-140 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

25 There is no basis in the specification as originally filed for the term “modified wild-type”.

Advisory Information:

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Lorraine M. Spector, whose telephone number is (703) 308-1793. Dr. Spector can normally be reached Monday through Friday, 9:00 A.M. to 5:30 P.M.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached at (703)308-4623.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist at telephone number (703) 308-0196.

Certain papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1 (CM1). The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Official papers filed by fax should be directed to (703) 305-4242. Faxed draft or informal communications with the examiner should be directed to (703) 308-0294. **Please** advise the Examiner at the telephone number above when an informal fax is being transmitted.


Lorraine Spector, Ph.D.
Primary Examiner

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3/19/01